

A METHOD OF IMPROVING THE EFFICACY OF LACTIC ACID BACTERIAL
STARTER CULTURES AND IMPROVED STARTER CULTURE COMPOSITIONS

ABSTRACT

Methods of enhancing the growth rate and/or controlling the
5 metabolic activity of lactic acid bacteria and of improving the
shelf life and/or the quality of an edible product using lactic
acid bacterial organisms which are defective in their pyruvate
metabolism. There is also provided starter culture compositions
10 comprising such defective lactic acid bacteria as helper
organisms and lactic acid bacterial starter culture strains.
Useful helper organisms are *Lactococcus* strains which are
defective with respect to pyruvate formate lyase (Pfl) and/or
lactate dehydrogenase (Ldh) activity. The helper organisms may
overexpress a gene coding for an NAD⁺ regenerating enzyme such
15 as NADH oxidase encoded by *nox* gene.